

Trends in Inequality in Pakistan between 1998-99 and 2001-02

TALAT ANWAR

1. INTRODUCTION

Although there has been a much debate on poverty in Pakistan in recent time, the discussion on inequality remained limited. Poverty and inequality are closely linked—for a given mean income, the more unequal the income distribution, the larger the percentage of the population living in income poverty. Thus, incomes at the top and in the middle of the distribution may be just as important to us in perceiving and measuring poverty as those at the bottom. It is, thus, important to monitor the whole income distribution rather than merely the bottom of distribution.

The issue of income inequality in Pakistan has been important in the policy discussions since the early 1960s. Since then, a number of attempts have been made to estimate the income or expenditure inequality using the Household Income and Expenditure Survey (HIES) data. However, a perception of increasing absolute poverty in Pakistan has shifted the focus of studies from inequality (or relative poverty) to absolute poverty. Consequently, a number of attempts have been made by various authors/institutions to estimate the poverty in Pakistan in the 1990s. The debate on trends in poverty during the 1990s—an era of stabilisation and structural adjustment has been wide-ranging in Pakistan. However, there is no discussion on the changes in income distribution from the policy and institutional reforms. World Bank (2003); FBS (2001) and Kemal (2003) are only three exceptions. While the former two studies report Gini Coefficients in their studies on absolute poverty in Pakistan without explaining its variations over time, the latter study is a comprehensive review on the income distribution in Pakistan. It is this context that guided the author to evaluate the trends in inequality in Pakistan using the most recently available household data sets—PIHS 1998-99 and 2001-02. The results for the year 2001-02 are being presented for the first time, which should be useful to

Talat Anwar is Joint Director, Research Department, State Bank of Pakistan, Karachi.

Author's Note: Thanks are due to Dr Sarfraz Khan Qureshi, formerly Director, PIDE, for his critical comments on an earlier draft of this paper. The author is also grateful to Mr Hammad Ali of the Federal Bureau of Statistics, Islamabad, for providing technical help and guidance for PIHS 1998-99 and 2001. The views expressed are those of the author and do not necessarily reflect those of the State Bank of Pakistan.

assess the impact of various policies pursued by the government during this period. This paper is organised as follows: Section 2 provides a review on the historical trends in income inequality in Pakistan. Section 3 discusses measurement of inequality. Section 4 discusses the data sets that have been used in this study. Section 5 examines the trends in inequality in Pakistan between 1998-99 and 2001-02. Finally, Section 6 draws some conclusions from the analysis.

2. REVIEW OF INEQUALITY

Existing work on inequality shows that a large number of attempts have been made to estimate extent of income inequality in Pakistan during the last four decades. Various attempts on income distribution include Bergen (1967); Azfar (1973); Khundkar (1973); Naseem (1973); Alauddin (1975); Chaudhry (1982); Mahmood (1984); de Krujik and Leeumen (1985); Ahmad and Ludlow (1989) and Malik (1992). The major limitation of the earlier studies was that they were based on published grouped data set of Household Income and Expenditure Surveys (HIES) conducted by the Federal Bureau of Statistics, Government of Pakistan. The grouped data does not allow wide range of adjustments among household income or expenditure. Thus, inhibiting better quality estimates. However, recently when HIES micro data became available in the 1990s, a number of authors used the micro data to estimate the Gini Coefficient. These included Malik (1992a); Anwar (1997) and Ahmad (2000). More recently, while FBS (2001) and World Bank (2003) reported Gini Coefficients for the 1990s in their studies on poverty without explaining its variations, Kemal (2003) presented a comprehensive review on income distribution in Pakistan. Table 1 reports different inequality indices estimated by various studies.

Chart 1 summarises the inequality trends implied by the above evidence from 1963-66 to 1998-99. The evidence suggests a declining trend in income (or expenditure) inequality between 1963-64 to 1970-71. There is only one exception where inequality increased in urban areas between 1963-64 to 1966-67. The evidence in the 1970's and 1980s suggests that inequality seems to have worsened over these two decades. However, only in one case inequality declined in urban areas between 1978-79 to 1984-85, while the overall inequality continued to increase during this period, which is consistent with the long-term inequality trend over the last two decades. It is noteworthy that during the above period, the economy witnessed a remarkable growth rate mainly due to the capital inflow in the form of worker's remittances and foreign aid, which has also increased the real wages over the period. However, the wage increases and worker's remittances were not spread evenly among households, which seem to have increased income inequality during the above period. Thus, it appears that rapid economic growth has increased inequality during the 1970s and 1980s. On the other hand, evidence shows that the rapid growth has reduced¹ the absolute poverty over the period. It is mainly due to

¹See Anwar and Qureshi (2003).

Table 1

Inequality Trends 1963-64 to 1998-99

Authors	Unit of Measurement	Region	Inequality Trends (Gini Coefficients)							
			63-64	66-67	68-69	70-71	71-72	1979	84-85	87-88
Bergan (1967)	Household income	Rural	.357	—	—	—	—	—	—	—
		Urban	.430	—	—	—	—	—	—	—
		Overall	.381	—	—	—	—	—	—	—
Khundkar (1973)	Household income	Rural	.350	.321	.294	—	—	—	—	—
		Urban	.366	.384	.364	—	—	—	—	—
Naseem (1973)	Real consumption expenditure of Household	Rural	.299	.299	.262	.262	—	—	—	—
		Urban	.331	.371	.361	.352	—	—	—	—
Alauddin (1975)	Real income of Household	Rural	.349	.330	.293	.291	.310	—	—	—
		Urban	.374	.393	.380	.363	.382	—	—	—
Chaudhry (1982)	Household income	Rural	.348	.319	—	.219	.308	—	—	—
		Per capita income	Rural	.223	.186	—	.146	.164	—	—
Mahmood (1984)	Household income	Rural	.350	.318	.300	.303	.295	.307	—	—
		Urban	.381	.380	.374	.360	.363	.414	—	—
	(Other measures of inequality based on household income)									
	Coeff.of Var	Rural	.694	.634	.577	.567	.611	.658	—	—
		Urban	.769	.815	.813	.757	.786	.927	—	—
	Atkinson's index $\epsilon=0.5$	Rural	.098	.081	.072	.069	.075	.085	—	—
		Urban	.116	.117	.115	.105	.107	.141	—	—
	Atkinson's index $\epsilon=3.0$	Rural	.427	.357	.339	.320	.332	.354	—	—
		Urban	.452	.426	.414	.400	.377	.473	—	—
	Theil's Index	Rural	.204	.172	.147	.143	.159	.179	—	—
		Urban	.246	.257	.253	.227	.237	.315	—	—
	S.D. of logs	Rural	.632	.562	.540	.523	.540	.565	—	—
		Urban	.674	.648	.636	.619	.606	.699	—	—
	Ahmed and Ludlow (1989)	Household expenditure	Rural	—	—	—	—	—	.312	.328
Urban			—	—	—	—	—	.404	.392	—
Malik (1992a)	Household expenditure	Rural	—	—	—	—	—	—	.305	.325
		Urban	—	—	—	—	—	—	.394	.451
		Overall	—	—	—	—	—	—	.302	.338
Inequality Trends (Gini Coefficients)								87-88	92-93	98-99
FBS (2001)		Rural	—	—	—	—	—	—	.239	.252
		Urban	—	—	—	—	—	—	.317	.359
		Overall	—	—	—	—	—	—	.269	.302
World Bank (2003)		Rural	—	—	—	—	—	.240	.252	.251
		Urban	—	—	—	—	—	.316	.316	.353
		Overall	—	—	—	—	—	.270	.276	.296

Sources: As cited above.

Chart 1

Trends in Inequality in Pakistan 1963-64 to 1998-99

Years	Rural	Urban	Overall
1963-64 to 1966-67	↓	↑	↓
1966-67 to 1968-69	↓	↓	↓
1968-69 to 1970-71	↓	↓	↓
1970-71 to 1971-72	↑	↑	↑
1971-72 to 1978-79	↑	↑	↑
1978-79 to 1984-85	↑	↓	↑
1984-85 to 1987-88	↑	↑	↑
1987-88 to 1992-93	↑	Stagnant	↑
1992-93 to 1998-99	↑	↑	↑

↑ : An increase in inequality between two years.

↓ : A decrease in inequality between two years.

Source: Various studies cited above.

the fact that large remittances from overseas workers to their families increased the income of a large number of people below the poverty line. In addition, the real wages of both skilled and unskilled workers have also increased over the period. The rise in real wages together with remittances resulted in a decline in proportion of households in absolute poverty over the last two decades. Thus, it appears that while rapid growth has worsened income inequality, the rapid growth has reduced the poverty during the 1970s and 1980s.

On the other hand, trends in income inequality during the 1990s are different from the decades of the 1970s and 1980s. The evidence suggests an increasing trend in inequality in Pakistan between 1987-88 and 1992-93. While urban inequality remained stagnant, the rural inequality continued to rise between 1987-88 and 1992-93. Finally, inequality increased in all regions between 1992-93 and 1998-99. It is noteworthy that economic growth has slowed down during the decade of the 1990s, which seems to have affected the income of the poorest segments of the population and thus resulted in higher inequality in Pakistan. Thus, it appears that while rapid growth has worsened the inequality during the 1970s and 1980s, the slow growth has also increased inequality in Pakistan during the 1990s.

3. MEASUREMENT OF INEQUALITY

The most common approach is to select number of inequality measures and compute them to rank the income distribution. A number of different inequality indices have been proposed on different basis.² These include Coefficient of Variation, Gini Coefficient, Atkinson index etc. These measures are more sensitive to changes in different parts of the size distribution than others.

The well-known Gini Coefficient is the ratio of twice the area between the Lorenz curve and the diagonal. There are various ways of expressing this ratio—for example

$$Gini = \frac{2}{n^2 \bar{y}} \sum_{i=1}^n i(y_i - \bar{y}) \quad \dots \quad \dots \quad \dots \quad \dots \quad (1)$$

Where y_i are arranged in ascending order by their subscripts and thereby created scope for numerous generalisation. The Gini Coefficient is most sensitive to the middle part of distribution because it depends on the rank order weights of income recipients and on the number of recipients within a given range.

Although a number of different inequality indices³ have been proposed on different bases, an inequality measures ought to satisfy a minimal set of fundamental properties.

They are:

(1) Inequality Aversion; (2) Replication Invariance; and (3) Anonymity.

Inequality aversion is also referred to as Pigou-Dalton Principle of transfer sensitivity. The principle requires that whenever a unit income is transferred from a richer person to a poorer person and such a transfer does not reverse the ranking of the two individuals, then the measure of inequality should decrease. Replication Invariance requires that if several populations identical in every respect were combined, inequality in the combined population would be the same as for the separate ones. Anonymity presumes that appropriate adjustment for differences in needs has been made. Gini Coefficient satisfies these minimal set of properties and is the most commonly used measure of inequality. Therefore, this paper chooses Gini Coefficient to measure income inequality in Pakistan between 1998-99 and 2001-02.

4. THE DATA SET

This paper uses micro data of Pakistan Integrated Household (PIHS) conducted by the Federal Bureau of Statistics (FBS), Government of Pakistan

²For a good discussion of inequality measures, See Kakwani (1980); Cowell (1993); Morris and Preston (1986); Lambert (1989) and Culyer and Wagstaff (1997).

³For a good discussion of inequality measures, See Kakwani (1980, 1990); Cowell (1993); Morris and Preston (1986); Lambert (1989) and Culyer and Wagstaff (1997).

Islamabad for the year 1998-99 and 2001-02. The universe consists of all urban and rural areas of the four provinces of Pakistan defined as such by the 1998 Population Census. The sample of PIHS 1998-99 consists of 14,821 households both rural and urban in all the four provinces of Pakistan. On the other hand, PIHS 2001-02 has 14,831 sample households. The micro data files contain weighting factors, which are designed to obtain the nationally representative estimates of population.

The household is the basic unit for which the information has been collected. It is widely accepted that income components are less reliably reported to surveyors than are expenditure items. Furthermore, incomes of the poor often vary over time, particularly in rural areas where income depends on rain-fed agriculture. This observation implies that consumption expenditure will be better a indicator than income for measurement of living standard. Hence, household consumption expenditure including non-durables and some durables is used as a proxy for 'permanent income' for the measurement of inequality in this paper.

Evidence shows that distributional assessments in Pakistan have been conducted without taking adequate account of differences in needs and economies of scale in household consumption. The common practice in Pakistan has been to divide the household expenditure by household size. This is considered to be rather unsatisfactory. This paper corrects the data for household size and composition using 0.8 for all family members.

5. TRENDS IN INEQUALITY BETWEEN 1998-99 AND 2001-02

This section examines the trends in the distribution of expenditure between 1998-99 and 2001 from two household surveys—PIHS 1998-99 and 2001-02. Table 2 reports Gini Coefficient for Pakistan by regions and province between 1998-99 and 2001-02. The results indicate an increase in inequality in overall Pakistan during the period. The result is also confirmed by the Lorenz curve for Pakistan which indicates that the Lorenz curve for 2001-02 lies below the 1998-99 curve implying that the distribution of 2001-02 is more unequal than the distribution of 1998-99 (See Figure 1). However, trends at the regional level depict a different picture. While inequality has declined in urban areas, it seems to have increased in rural areas during the period.

However, the above results conceal significant differences in changes in different parts of distribution, which are not captured by these inequality measures. Tables 3 and 4 report the percentage share of expenditure as proxy for income between 1998-99 and 2001-02 for overall Pakistan, rural and urban regions. The percentage share of expenditure indicate that while lowest 40 percent lost their income share, the middle and highest 20 percent gained in their income share implying that inequality increased in Pakistan during the period at the expense of the lowest 40 percent group. In rural areas, lowest 20 percent and middle 40 percent to 60 percent also lost their income share, whereas remaining income groups observed

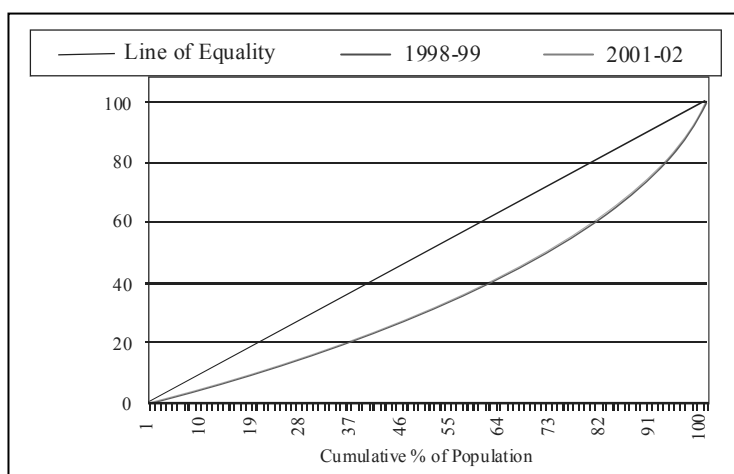
an increased in their expenditure (See Table 4). On the other hand, both the lowest 20 percent and the highest 20 percent lost their income share in urban areas but erosion of their income share income share of the lowest 20 percent was substantial as they lost 5 percentage point decline in their income share over the period. These trends are consistent⁴ with the trends in absolute poverty as more unequal income distribution resulted in larger groups of people who are excluded from economic opportunities resulting in higher poverty level in 2001-02 compared to 1998-99. Results at province level indicate that two provincial regions shared in the countrywide trends in inequality (See Table 2). While rural Punjab indicates an increasing trend in inequality, Sindh, NWFP and Balochistan showed a declining trend in inequality across rural areas. Similarly, while inequality increased in urban Sindh, it declined in Punjab, NWFP and Balochistan.

Table 2
Gini Coefficient for 1998-99 and 2001-02

Region	1998-99	2001-02
Pakistan		
Overall	0.3019	0.3067
Rural	0.2521	0.2534
Urban	0.3596	0.3581
Rural		
Punjab	0.2575	0.2699
Sindh	0.2477	0.2228
NWFP	0.2390	0.2359
Balochistan	0.2274	0.2040
Urban		
Punjab	0.3777	0.3475
Sindh	0.3352	0.3763
NWFP	0.3535	0.3207
Balochistan	0.2583	0.2519
Overall		
Punjab	0.3099	0.3059
Sindh	0.3082	0.3434
NWFP	0.2684	0.2555
Balochistan	0.2314	0.2179

Source: Author's computation from PIHS, 1998-99 and 2001.

⁴See Pakistan (2003). Also see Anwar and Qureshi (2003), Trends in Absolute Poverty in Pakistan: 1990-2001, Proceedings of 18 th PSDE Meeting and Conference held in January 2003, Absolute poverty increased from 30.4 percent in 1998-99 to 35.6 percent in 2001.

Fig. 1. Lorenz Curve for Pakistan, 1998-99 and 2001.**Table 3***Percentage Share of Expenditure between 1998-99 and 2001-02 in Pakistan*

Population Income Groups	Percentage Share of Expenditure		% Change in Expenditure Share
	1998-99	2001-02	
Lowest 20%	9.45	9.12	-3.4921
Lower Middle 20% to 40%	13.17	13.16	-0.0759
Middle 40% to 60%	16.34	16.46	0.7344
Upper Middle 60% to 80%	20.88	20.98	0.4789
Highest 20%	40.16	40.28	0.2988

Source: Author's calculation from PIHS 1998-99 and 2001.

Table 4*Percentage Share of Expenditure between 1998-99 and 2001-02 in Rural and Urban Areas*

Population Income Groups	Percentage Share of Expenditure		% Change in Expenditure Share between 1998-99 and 2001-02	Percentage Share of Expenditure		% Change in Expenditure Share between 1998-99 and 2001-02
	1998-99	2001		1998-99	2001	
Lowest 20%	10.38	10.26	-1.1560	8.17	7.7	-5.7527
Lower Middle 20% to 40%	14.33	14.35	0.1395	11.63	12.02	3.3533
Middle 40% to 60%	17.54	17.53	-0.0570	14.92	15.37	3.0160
Upper Middle 60% to 80%	21.95	21.99	0.1822	20.24	20.6	1.7786
Highest 20%	35.80	35.87	0.1955	45.04	44.31	-6.207

Source: Author's calculation from PIHS 1998-99 and 2001.

6. CONCLUSIONS

The paper reviewed the historical trends in inequality and examined inequality trends from two household surveys for 1998-99 and 2001-02. The results suggest that inequality as measured by the Gini coefficient has increased in Pakistan between 1998-99 and 2001-02. While inequality rose in rural areas unambiguously, it has declined in urban areas during the period. A comparison of Gini coefficient from Tables 1 and 2 suggests that income inequality is turned out to be the highest in 2001-02 than in the previous years of the 1990s. More unequal societies tend to develop larger groups of people who are excluded from opportunities others enjoy such as a better education, access to loans, or to insurance and who therefore do not develop their full productive potentials. It is thus imperative to reduce income inequality. A strand of research shows⁵ that high inequality entails a lower subsequent rate of growth in average income and hence lower rate of progress in reducing absolute poverty. Thus, if government aims to reduce absolute poverty via its growth accelerating strategy, it should focus primarily on reducing high-income inequalities through its re-distributive policies of taxes and transfers.

While World Bank (2003) and FBS (2001) showed a rising trends in inequality between 1992-93 and 1998-99, it can be concluded together with the finding of this paper that inequality continued to rise persistently throughout the decade of the 1990s. In contrast to the earlier decades when inequality increased due to rapid economic growth, inequality seems to have worsened because of lower economic growth during the decade of 1990s. The lower economic growth seems to have resulted in losses of income amongst the poorest segments of the population.

It is noteworthy that the country had experienced a worsening in its governance profile during the 1990s. Corruption is an aspect of governance that hurt the poor through a variety of channels: lower economic growth, more regressive taxes, lower and more ineffective social spending and disincentives to investment in the human capital of the poor. Corruption also increases income inequality and poverty by perpetuating unequal distribution of assets. Thus, good governance is crucial for reducing income inequality and poverty. Good governance can have strong egalitarian effects. Evidence shows⁶ that good governance is associated with higher levels of social spending, more effective targeting of resources to the poor and better quality public services.

The above changes in inequality are the result of various socioeconomic factors. To determine what is driving the increase in inequality in Pakistan throughout the 1990s, one needs to examine various factors, which are discussed here for future research. The most important force driving income inequality changes is the changes in inequality of labour earnings, which may be combined with the

⁵See Ravallion (1997).

⁶See Mauro (1998); World Bank (2000).

non-wage income associated with self-employment and entrepreneurial activities. While government taxes and transfer play an important role, the wage dispersion and non-wage income from self-employment are the most important factors in determining the changes in inequality. While income from self-employment is more unequally distributed, the wage inequality may increase because of changes in returns to education as earning differential between university-educated workers and workers with primary education may have increased over time.

REFERENCES

- Ahmad, E., and S. Ludlow (1989) Poverty, Inequality and Growth in Pakistan. *The Pakistan Development Review* 28:4, 831–850.
- Ahmad, Mahboob (2000) Estimation and Distribution of Income in Pakistan, Using Micro Data. *The Pakistan Development Review* 39:4, 807–824.
- Alauddin, T. (1975) Mass Poverty in Pakistan: A Further Study. *The Pakistan Development Review* 14:4, 431–450.
- Anwar, Talat (1997) Inequality and Social Welfare in Pakistan. *Journal of Social Sciences and Humanities* 1:2.
- Anwar, Talat, and Sarfraz Khan Qureshi (2003) Trends in Absolute Poverty in Pakistan: 1990–2001, Proceeding of the Papers at the 18th Annual General Meeting and Conference held in January, Islamabad.
- Azfar, J. (1973) The Distribution of Income in Pakistan: 1966–67. *Pakistan Economic and Social Review* 11, 40–66.
- Bergan, A. (1967) Personal Income Distribution and Personal Savings in Pakistan, 1963–64. *The Pakistan Development Review* 7, 160–212 and 17, 63–80.
- Chaudhry, M. G. (1982) Green Revolution and Redistribution of Rural Income in Pakistan. *The Pakistan Development Review* 21:2, 173–205.
- Cowell, Frank (1993) *Measuring Inequality*. (2nd editions).
- Culyer, A. J., and Adam Wagstaff (1997) *The Economic Analysis of Social Policy*. Cheltenham: Edward Elgar.
- Kakwani, Nanak (1980) *Income Inequality and Poverty: Methods of Estimation and Policy Applications*. New York: Oxford University Press.
- Kakwani, Nanak (1990) Testing for Significance of Poverty Differences with Application to Cote d'Ivoire, Living Standard Measurement Study. The World Bank, Washington, D. C. (Working Paper No. 62.)
- Kemal, A. R. (2003) Income Distribution Studies in Pakistan and the Agenda for Future Research. In *Human Condition Report 2003*. Centre for Research on Poverty Reduction and Income Distribution (CRPRID), Islamabad.
- Khandkar, R. (1973) Distribution of Income and Wealth in Pakistan. *Pakistan Economic and Social Review* 11.

- de Krujik, Hans, and Myrna van Leeuwen (1985) Changes Poverty and Income Inequality in Pakistan during the 1970s. *The Pakistan Development Review* 24:3&4, 407–422.
- Lambert, P. J. (1989) *The Distribution and Redistribution of Income: A Mathematical Analysis*. Oxford: Basil Blackwell.
- Mahmood, Zafar (1984) Income Inequality in Pakistan: An Analysis of Existing Evidence. *The Pakistan Development Review* 23, 2 & 3.
- Malik, Shahnawaz (1992) Rural Poverty in Pakistan. Unpublished Ph.D. Thesis Submitted to the University of Sussex.
- Malik, Sohail, J. (1992a) Rural Poverty in Pakistan: Some Recent Evidence. *The Pakistan Development Review* 31:4, 975–995.
- Mauro, Paolo (1998) Corruption and the Composition of Government Expenditure. *Journal of Public Economics* 69, 263–79.
- Morris, N., and I. Preston (1986) Inequality, Poverty and the Redistribution of Income. *Bulletin of Economic Research* 38:4.
- Naseem, S. M. (1973) Mass Poverty in Pakistan: Some Preliminary Findings. *The Pakistan Development Review* 12:4, 312–360.
- Pakistan, Government of (2001) *Poverty in the 1990s*. Islamabad: Statistics Division, Federal Bureau of Statistics.
- Pakistan, Government of (1998-99 and 2001) *Household Income and Expenditure Survey (HIES), 1998-99 and 2001 Micro Data Files*. Islamabad: Statistics Division, Federal Bureau of Statistics.
- Pakistan, Government of (Various Issues) *Economic Survey*. Islamabad: Ministry of Finance.
- Ravallion, Martin (1997) Can High-inequality Developing Countries Escape Absolute Poverty? *Economic Letters* 56 (1997), 51–57.
- Shorrocks, A. F., and J. E. Foster (1987) Transfer Sensitive Inequality Measures. *Review of Economic Studies* 54, 485–497.
- Shorrocks, A. F. (1983) Ranking Income Distributions. *Economica* 50, 3–17.
- State Bank of Pakistan (2003) Special Section on “Making Health Services Work for the Poor in Pakistan: Rahim Yar Khan Primary Healthcare Project” in SBP First Quarterly Report for FY2004.
- World Bank (2000) *World Development Report, 2000-2001: Attacking Poverty*. Washington, D. C.
- World Bank (2003) *Poverty in Pakistan: Vulnerabilities, Social Gaps, and Rural Dynamics*. Washington, D.C.